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ABSTRACT

Fifty-five Indian students between the ages of 16 and 22 years were selected from the junior and senior English classes at the Fort Sill Indian School to examine the effects of background music in helping lower socio-economic American Indians understand film content and in manipulating their emotions. This study also looked at how cognitive style affects an individual's processing of what he sees or hears. In the first group, 32 seniors were given Witkin's Group Embedded Figures Test and then shown a 15-minute sound film, "One-Eyed Men Are Kings." The 23 juniors in the second group were shown the same film, but without the sound; all other aspects of the research were the same. A multiple regression analysis was run on all subjects to see if cognitive style, English grades, or amount of time spent watching television, could be used as predictors to determine a person's level of comprehension of film content. The results indicate that sound, even when it is only background music with minimal sound effects, seems to be essential to the understanding of film. Also, disadvantaged Indians have the same percentage of field dependents, field independents, and indiscriminates as do the general population. A 50-item bibliography is attached. (CHC)

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FIELD INDEPENDENCE AND THE EFFECT OF BACKGROUND MUSIC ON FILM UNDERSTANDING AND EMOTIONAL RESPONSES OF AMERICAN INDIANS

By

Josephine Raburn

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Today when film and television are so widely seen by everyone it becomes important to know how people view them, and what effects their various components are having on viewers. It seems likely that most people understand what they are seeing--at least to some degree. Does background music help them? If it does, is it manipulating their emotions? Does cognitive style determine how an individual processes what he sees and hears? Are lower socioeconomic American Indians affected by background music in a positive way?

The purpose of this study was to answer some of these questions.

REVIEW OF THE LITERATURE

Stravinsky (1936) once said that he considered music powerless to express anything whether a feeling, an attitude of mind, a psychological mood, or a phenomenon of nature. The composer, Mendelssohn, would not have agreed with him. Mendelssohn thought that music could express very definite thoughts, and modern directors of films and television shows have considered it important in those productions. They expect it to control emotions and to help comprehension.

American Indians have different cultural patterns than the majority of Americans, but they are exposed to many of the same mass communication outlets. It would seem logical to assume that they are under the blanket of the larger American culture as well as that of their own family and tribe. One must know the sensory input preferences of the various ethnic and cultural groups such as Indians in order to appeal to

them in the most successful way. (Cappon, 1971).

Film has long been thought to have a language or quasi-language. As early as 1915, when film was still in its infancy, the poet, Vachal Lindsay, called it a language. (Monaco, 1977). Others (Foster, 1979; Dondis, 1973; and Worth, 1968) would argue and say that film was not logical like language; that it was dream-like and made direct contact with the emotions. Hugo Mauerhofer, a German psychologist, has said that film is a half-sleeping acceptance of manufactured dreams. He identifies psychological changes that take place when the theater is darkened and the viewer becomes passive and withdraws from reality. The imagination is intensified, everyone is anonymous, and boredom lurks stealthily on the brink of this situation. (Mauerhofer, 1949).

Rheinish (1971) came to the conclusion that American children understand film better as they get older. Studies uniformly report that the interpretation of visual data has to be learned. (Segall, Campbell, and Herskovits, 1966). Pryluck (1968) examined film in detail and attempted to translate it into a symbol system. Monaco (1977) used some of the methods used to study language and applied them to a study of film. He called film a product of culture because it uses every symbol system in use by a culture. It has both detonative and connotative meanings. Its codes are critical constructions, such as a grainy image meaning truthful. Montage takes two unrelated things and makes a third statement by putting them together. The dissolve is the comma in film, and so on.

Part of the language of film is the fact that depth of focus (background and close-up are both in focus) makes the spectator

have a closer relation to what is happening than he would have in reality (Bazin, 1967).

No two people experience a film in the same way. It is the most highly individual of all experiences (Clair, 1953), but motion pictures are almost universally percieved without trouble. Studies have shown misconceptions (Segall, 1966) and these are usually because we approach any film by the cultural values we share (Balazs, 1952). Films produced in one land are often viewed in another, and subtle sorts of effects and messages that makers expect will be obtained may not be because cultures differ in their non-verbal cues (Whiting, 1977). More exposure to cognitive structure of the target culture enables a person to encode and decode messages in a manner which is appropriate to the culture (Foa, 1974). People choose their linguistic signs arbitrarily, according to Levi-Strauss, and the sign lies half way between perception and conception. The sign is something which represents a concept, or an idea, but is not itself a concept or idea. A red traffic light is a red traffic light as we perceive it, but as a sign, it means stop. Cultures communicate messages by using one sign after another in a linear manner (Badcock, 1975). Films incorporate these signs as part of the visual element. Another part of the film is the sound track which gives other levels of meaning through dialogue, sound effects, and musical score. The sound may act as a transitional device to take the viewer from shot to shot or from scene to scene. It

sets the mood and the emotion of the action and has a tremendous effect on the audience's response. Or does it? Rene Claire did not care for sound films and spoke nostalgically of the "delightful numbness that used to overcome audiences after seeing a silent film of pure images." (Clair, 1953) Two studies in the fifties (Craig, 1956 and Grosslight and McIntyre, 1955) found that silent films were superior to sound films in teaching school subjects, but a recent study indicated that there might be print oriented learners and auditory learners. The auditory learners were described as having characteristics similiar to people who are field independent. (De Nike, 1975) The effects of color and black and white in the comprehension of film has been tested in the past and showed no difference. A recent study to see if color television had changed those results showed that it had not. There was no difference in comprehension, but both children and young people preferred color. (Johnson, 1979). Milton Knobler has accused movies of relying too heavily on the verbal mode of communication when they should be using their visual potential. He thinks that visual illiterates exceed those who are verbally illiterate. (Knobler, 1976).

Perhaps people will look at film in the same way that they look at the world, according to their cognitive style. There are a number of cognitive styles that have been identified, and they might be defined as the way in which an individual receives, processes and uses information. In the late 1940's and early 1950's, Herman A. Witkin described the theoretical base for field dependence/field independence and devised tests to determine this state in people. These tests have survived well the tests of

time, particularly the rod and frame and the embedded figures tests. (Arbuthnot, 1972, Dumsha, Minard and McWilliams, 1973).

Salomon (1979) has said that different symbol systems call for different sets of mental skills. In his experiments with film, he found that singling out details, visualization, and changing points of view can be affected by filmic coding elements. He has said that a symbol system such as film will be better for certain people than it is for others depending on their cognitive make-up. Witkin has shown that the child develops from field dependence toward field independence until early adolescence when a levelling off occurs. The perceptual style a person has developed then continues until old age. (Witkin, Lewis, Hertzmen, Machover, Meissner, and Wapner, 1954). Zigler, (Zigler, 1963) does not agree with that and says that some individuals will reverse this pattern and become more field dependent in early adulthood.

Witkin and others have noted sex differences. Women tend to be more field dependent than men, but the difference is very small according to averages reported in the manual which accompanies the Group Embedded Figures Test. Other studies have shown no difference at all, or a difference only if girls are trying to achieve an appropriate sex role (Sherman, 1978). Chance and Goldstein showed that practice did away with sex differences in embedded-figures performance. (Chance & Goldstein, 1971).

Witkin (1962) also said that field independents had more self esteem than dependents, but Hulfish (1978) insists that self esteem is not related to field independence. Witkin (1971) found field independents better in visual analysis than in verbal

comprehension. Field independence is considered a more mature and adaptive mode of functioning than is field dependence. Gildemeister (1978) found field independence consistently related to spatial vizualization. Processing by the cognitive structure is effected by expectancy, cognitive style, and affective components (Canelos, 1979). Vigeland (1973) showed that cultural factors may inhibit the ordinary development toward a more articulate cognitive style. There is limited evidence that certain cognitive styles or strategies may enter into the assessment of ability, particularly when that assessment is based on multiple choice tests. (Kogan, 1971). A definition of field independence might be that it is an analytical, in contrast to a global, way of perceiving which reflects the ability to overcome an embedding context.

American Indians in Alaska (Eskimos) are more field independent than are Indian and other sub-culture groups in the continental United States. Ramirez (1976) found continental American Indians field dependent if they identified with their traditional culture. O'Boyle (1972) found Indians much like non-Indians in cognitive style, and Herman (1973) found Canadian Indians quite different from whites in perception, and he postulated this to be cultural. Samples (1979) found Navajos possessing a good sense of space and of visual clues. They were also very auditory and kinesthetic. He called them holonomic.

Film is not only understood on an intellectual level, but it is also experienced emotionally. The musical background of a film is designed to enhance the emotional reaction of the

viewer to what he sees on the screen. There is very little research on emotions because it is hard to pin one down to study it. An emotional state may be considered a function of a state of physiological arousal and a cognition appropriate to this state of arousal. People often evaluate their own feelings by comparing themselves with others (Schacter, 1962). The main theory on emotions is Schlosberg's activation theory. This puts emotional behavior on a continuum that includes all behavior, and it says that strong emotions activate and that no emotion is a sleeping state. There is minimum activation with such feelings as contempt, medium activation with mirth, and the highest level of activation comes with unpleasantness.

It was hypothesized that Indians would be predominately field independent, and that their comprehension of film would have a high correlation with the degree of field independency shown. That is, that field dependents would make lower scores on a test about content than would individuals who were field independent. Such a correlation (r= .80) had been observed in a former study of whites, blacks, and Indians from an average middle class high school. (Raburn, 1979).

Another hypothesis to be tested was that attention to visual details in a film would be increased when sound was not present. This seemed to be a logical assumption when based on results of studies showing silent instructional films superior to sound films.

Since sound is believed essential to the understanding of film, it was predicted that the group which did not hear sound

would not do as well on the comprehension test as the group which did hear the sound, and they were expected to be less emotional.

Both groups were expected to register more negative emotions than positive ones based on the earlier study, (Raburn, 1979) and males were expected to have more violent responses than did females. Less negative and positive attitudes were expected in the group which had no sound, and it was assumed that field independents would notice more details than field dependents. Field dependents were hypothesized to have stronger attitudes toward the characters of the film than field independents would have.

METHODOLOGY

Fifty-five Indian students between the ages of 16 and 22 years were selected from the junior and senior English classes at the Fort Sill Indian school. The school is a boarding school, run by the U. S. Department of the Interior, and all of its students must be at least one-fourth Indian to attend. None of these subjects expect to attend college, and all of them are considered to be disadvantaged young people by their faculty and administration.

There were thirty-two seniors, sixteen males and sixteen females, in the first group. They were given Witkin's Group Embedded Figures Test, and then were shown a 15-minute sound film, "One-Eyed Men Are Kings." This is a French pantomime which won a top award at the Cannes Film Festival in 1973. The story is about a middle aged man who is thoroughly dominated by his ancient mother and her mean little dog. It is a sad film, because it deals with the lonliness and alienation often felt by people in large cities even though they are surrounded by hundreds of other human beings. It is also a funny film because the dog gets the man into ridiculous, and often painful, situations. The only sound is background music which sets the mood of the film, and a few sound effects at its turning point when the main character tells his new-found friends in the park how he lost his eyesight.

All subjects were told that they would be adding to knowledge about how people understand film. While they watched, two people observed them according to a checklist to determine their attending behaviors.

The second group was composed of 23 males and females from the junior class. They were shown the same film, but without its sound track. All other aspects of the research were the same. The room was the same, they were given Witkin's Group Embedded Figures Test before they saw the film, and the same two observers recorded attending behaviors with a checklist.

After the film was shown to each of the two groups, the subjects were given a multiple choice test over its content to see if they had understood the meaning of gestures, film technique and story line. They were also asked to recall visual details by checking a correct answer from five choices in a short section following the content test. After that, they were given a booklet of ten black and white reversals of pictures in the film. They were to react to each picture by checking all appropriate adjectives from a list. Half of the adjectives were negative ones such as ugly, mean, hateful, etc., and half were positive ones such as good, kind, rich, pretty, etc. An action section also accompanied each picture response area. Subjects were told to ignore this section if they did not feel moved to do any of the things it suggested. This was designed to determine feelings and emotions. Some of the choices were violent actions such as biting, slapping, killing and hurting. Others were pleasant actions such as petting or kissing. Feelings choices were "feeling sorry for," loving, liking, hating or despising.

From the two groups a sampling chosen with a random number table was selected. Eight males and eight females were selected

from Group One and eight males and eight females were chosen from Group Two. A multiple regression analysis was run on all of the subjects to see if cognitive style, English grades, or amount of time spend watching television, could be used as predictors to determine a person's level of comprehension of film content. An analysis of variance was done on these thirty-two randomly chosen subjects to determine if the mean score on the content test of Group One was significantly different from the mean score of Group Two. Another ANOVA was done on the results of the detail test.

The reason for using a large number of people for the multiple regression and a smaller number for the ANOVAs was that more subjects give better results if description is the goal, but too many subjects in an ANOVA can pick up trivial differences and show significance when none exists.

The total number of negative adjectives and the total number of positive adjectives were counted for each person, and percentages of the total were ascertained. The same thing was done for actions checked by the subjects. Results of the GEFT tests were divided into thirds, with 0-6 being considered field dependent and 13-18 being considered field independent. All others were classified as indeterminate. The number of positive and negative adjectives was totaled for field dependent, field independent, and indeterminate, and also the number of violent responses were determined for each group.

The content test was revised by three Ph.D.'s. Two were experts in English literature, and one was an expert in American literature. They saw the film and then critiqued the content test and suggested revisions. After a group of twenty-four high school students took the test a Kuder Richardson 20 on it was determined as being .569 with a standard error of 1.75. Wording was changed slightly to improve its readability.

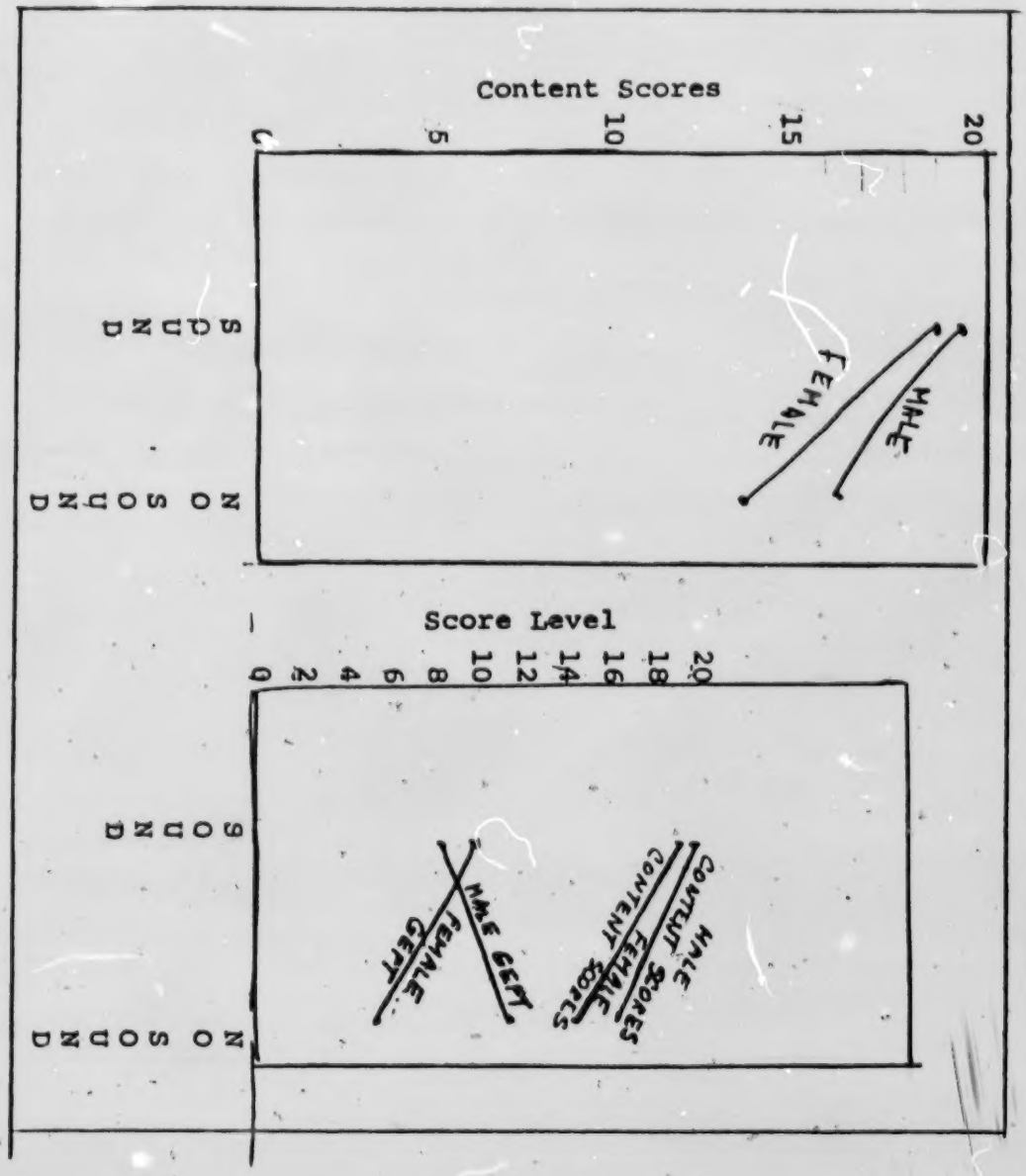
RESULTS

The scores of the GEFT fell almost perfectly into thirds. One third of the Indians were field dependent, one third were field independent, and one third were indiscriminate. (Scores 7 through 12). The means were lower than national averages made by college freshmen and given in the Embedded Figures Test Manual. The male mean was 10.09 as compared to 12.0, and the female mean was 8.5 as compared to 10.8. Females were more field dependent on an average than were males. More field dependent males were in Group One, and more field dependent females were in Group 2 as can be seen by Table 1, and Figure 1.

		GEFT	
		Mean	S. D.
Gp. 1	Female	10	5.31
	Male	8.5	5.48
Gp. 2	Female	5.5	2.78
	Male	11.9	3.07

Figure 1

TABLE 1


Content Scores
0
5
10
15
20
SECOND
SECOND
FEMALE
MALE
Score Level
0
2
4
6
8
10
12
14
16
18
20
SECOND
SECOND
MALE CERT
FEMALE CERT
CONTENT SCORES
FEMALE CONTENT SCORES
MALE CONTENT SCORES

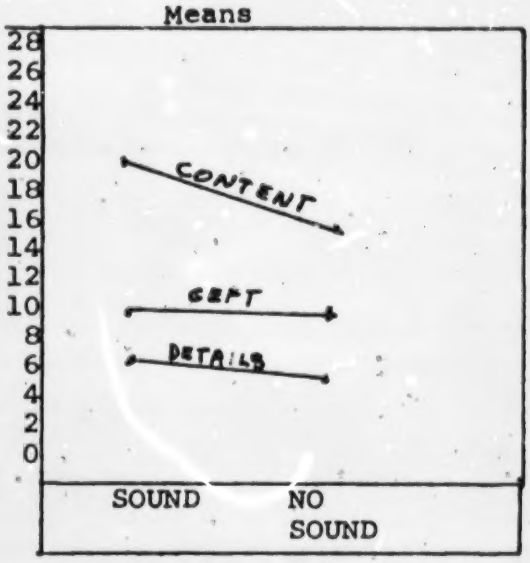
There was no significant correlation between content test scores and GEFT scores. Pearson Moment Correlation r was .39, r^2 was 15% and adjusted r^2 (error removed) was only 11%. There was also no correlation between English grades or hours spent watching television and the content scores. There was no significant correlation between GEFT scores and scores on the detail test ($r=.25$, $r^2=6\%$, and adjusted $r^2=1\%$).

Attention to details dropped slightly with no sound instead of increasing as had been hypothesized. The scores were very similiar and were high. These Indians were observant and remembered details well. Means of the content test, GEFT test, and detail test are graphed below in Figure 2.

Content Test

Female Mean
Gp. 1..19.6
S.D.... 4.81
Gp. 2..14.75
S.D..... 2.5

Male Mean
Gp. 1...20
S.D.....3.9
Gp. 2...16.4
S.D..... 3.9



Detail Test

Female Mean
Group 1....5.2
S. D...2.09
Group 2....4.6
S. D...1.40

Male Mean
Group 1....4.7
S. D...1.34
Group 2....4.4
S. D...1.7

Figure 2

Scores on the content test dropped significantly when there was no sound as had been expected. This can be seen in Figure 2, or in Table 1. The ANOVA summary table follows.

Film Content Scores

Source of Variation	Sum of Squares	Degrees of Freedom	MS	F	Significance of F
Main Effects	200.00	2	100.00	6.30	.005
Group	72.00	1	72	4.54	.042
Sex	128.00	1	128.00	8.07	.008
Two-way Interactions Group Sex	2.00	1	2.00	.13	.73
Explained	202.00	3	67.33	4.25	.01
Residual	443.997	28	15.86		
Total	645.997	31	20.84		

The soundless group members were not less emotional as had been hypothesized. They were more emotional. Group Two had more violent feelings than did Group One. However, positive feelings toward the characters increased when no sound was present. Sound did seem to have some control over emotional reactions to the film, but not exactly in the way expected. Lack of sound increased the negative adjectives checked by males, but decreased the negative adjectives used by females. The females in Group One were much more negative than were the males in Group One. Both field dependent and field independent females checked a large number of negative adjectives. Field independent males were much less negative than were field dependent males in both groups. (See Table 2)

Field dependent and field independent males were much more positive than field dependent and field independent females in Group One. They were just the opposite of each other as is shown in Table 3. Field Independent males checked more positive adjectives than did field dependent males. To summarize: Field dependents were more emotional and had formed more negative and more positive feelings toward the characters than field independents. Females

TABLE 2

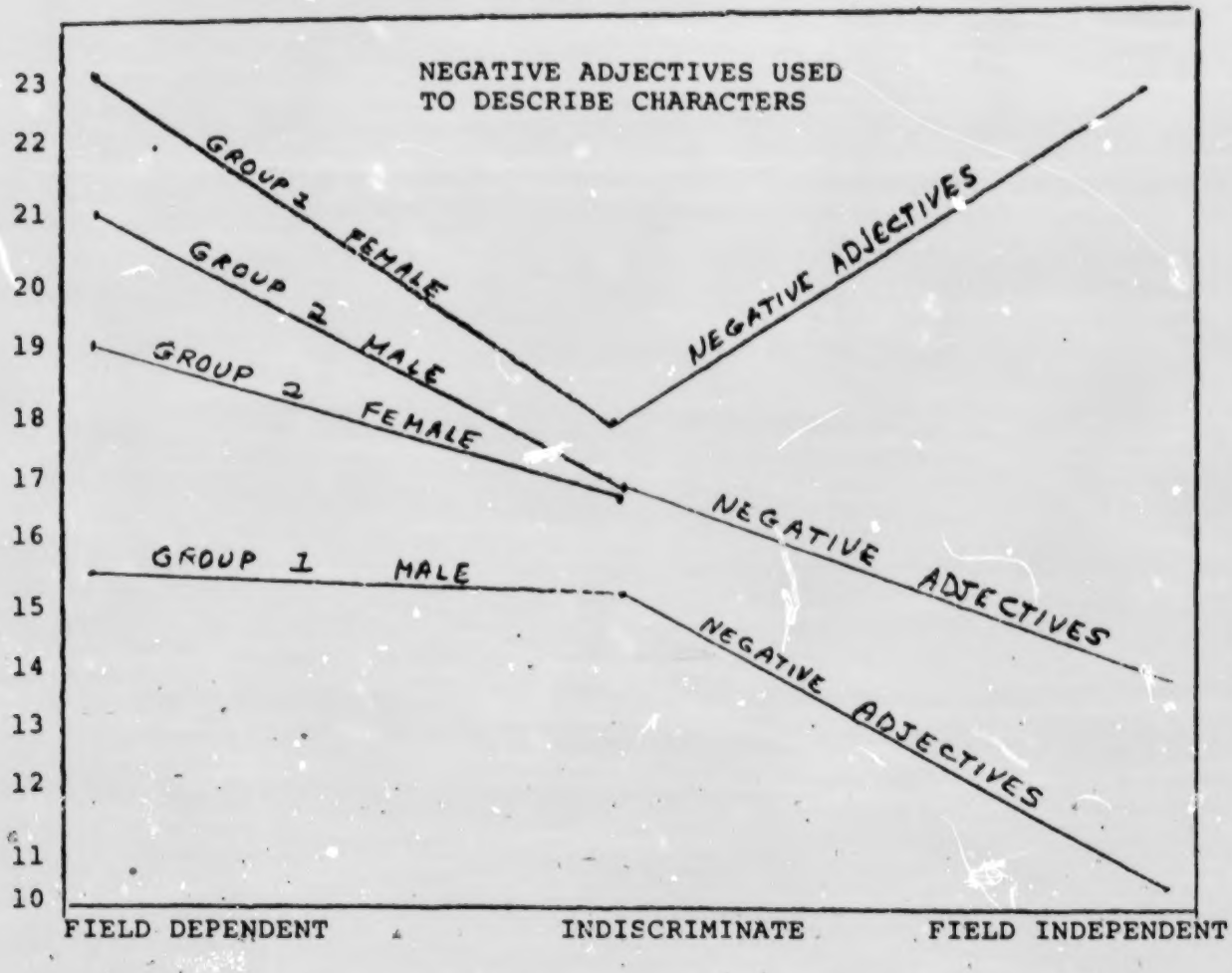
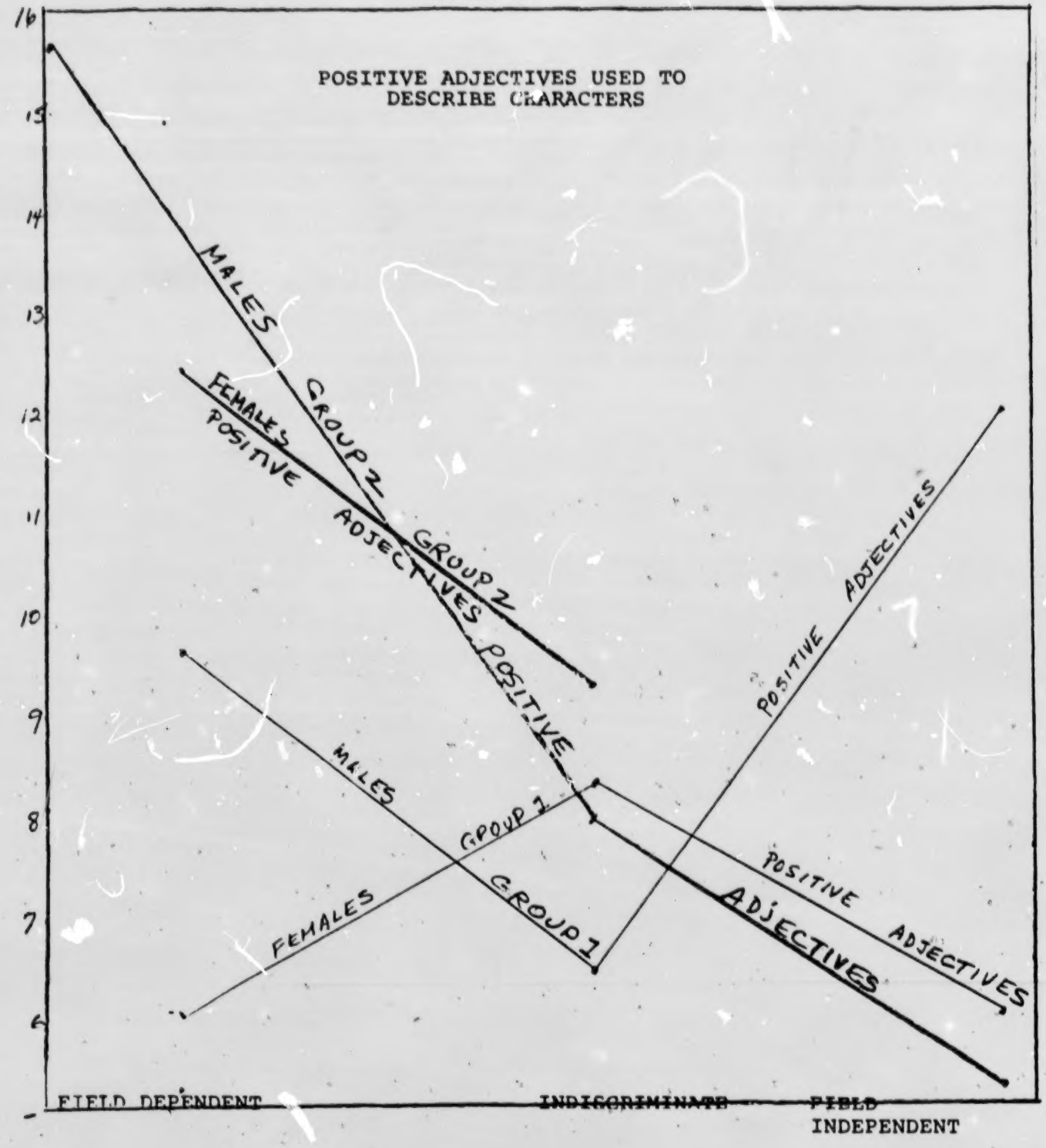

NEGATIVE ADJECTIVES USED
TO DESCRIBE CHARACTERS
23
22
21
20
19
18
17
16
15
14
13
12
11
10
GROUP 2 FEMALE
GROUP 2 MALE
GROUP 2 FEMALE
NEGATIVE ADJECTIVES
GROUP 1 MALE
NEGATIVE ADJECTIVES
NEGATIVE ADJECTIVES
FIELD DEPENDENT
INDISCRIMINATE
FIELD INDEPENDENT

TABLE 3


POSITIVE ADJECTIVES USED TO DESCRIBE CHARACTERS
16
15
14
13
12
11
10
9
8
7
6
MALES GROUP 2
FEMALES POSITIVE ADJECTIVES GROUP 2
MALES GROUP 1
FEMALES GROUP 1
POSITIVE ADJECTIVES
POSITIVE ADJECTIVES
FIELD DEPENDENT
INDISCRIMINATE
FIELD INDEPENDENT

were more negative and less positive than males of all levels. Field dependent females were more violent than males in both groups. Seventy-nine per cent of the females desired violent action against a character as opposed to only 31% of the males. The females in Group One were much more violent than the males in Group One, but indiscriminate females in Group Two were almost as low in violent feelings as the males of Group One. Table 4 shows violent feelings as mean scores for field dependents, field independents, and indiscriminates. Table 5 shows the kinds of actions desired by the subjects, or the kinds of feelings engendered by the film.

DISCUSSION AND CONCLUSIONS

The participants of both groups were extremely attentive throughout the film. They laughed at funny places, but did not look around the room or at other people. Sound, even when it is only background music with minimal sound effects, seems to be essential to the understanding of film. Indians were apparently better than average at observing and remembering visual details they had viewed in the film whether or not sound was used.

Some cultural signs were not understood by the subjects. For example, to the French film maker, a long shot showing the man in the film at a distance, dwarfed by the ancient cannons at Les Invalides, showed his insignificance. To the Indians it meant only that he was far away. Most of them did understand an unusual hand motion which meant drunk, even though it is not commonly used in America.

The Schlosberg activation theory is confirmed, since negative feelings caused violent actions in from twenty to forty-eight per cent of the subjects. The fact that females were more negative

TABLE 4

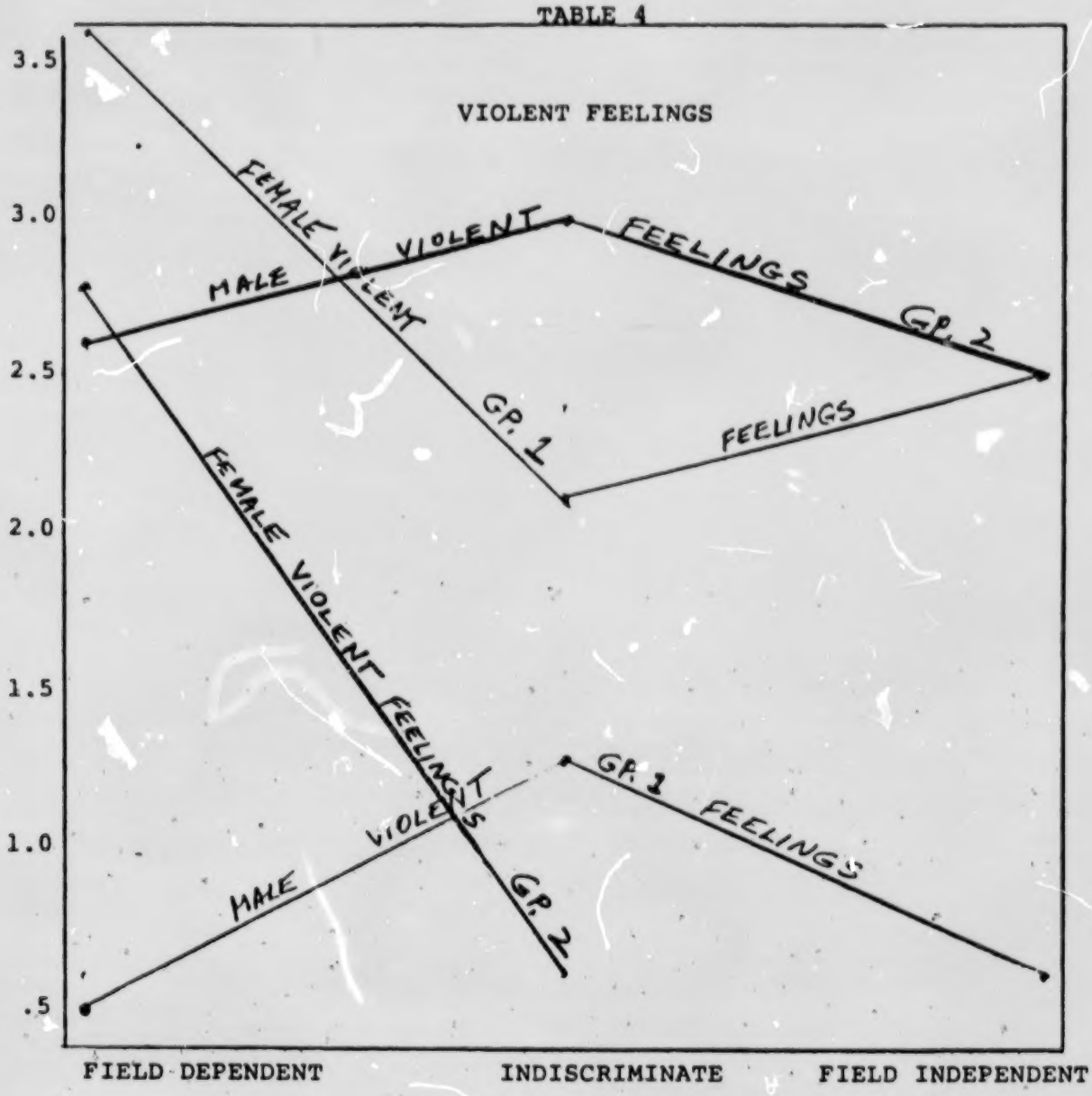
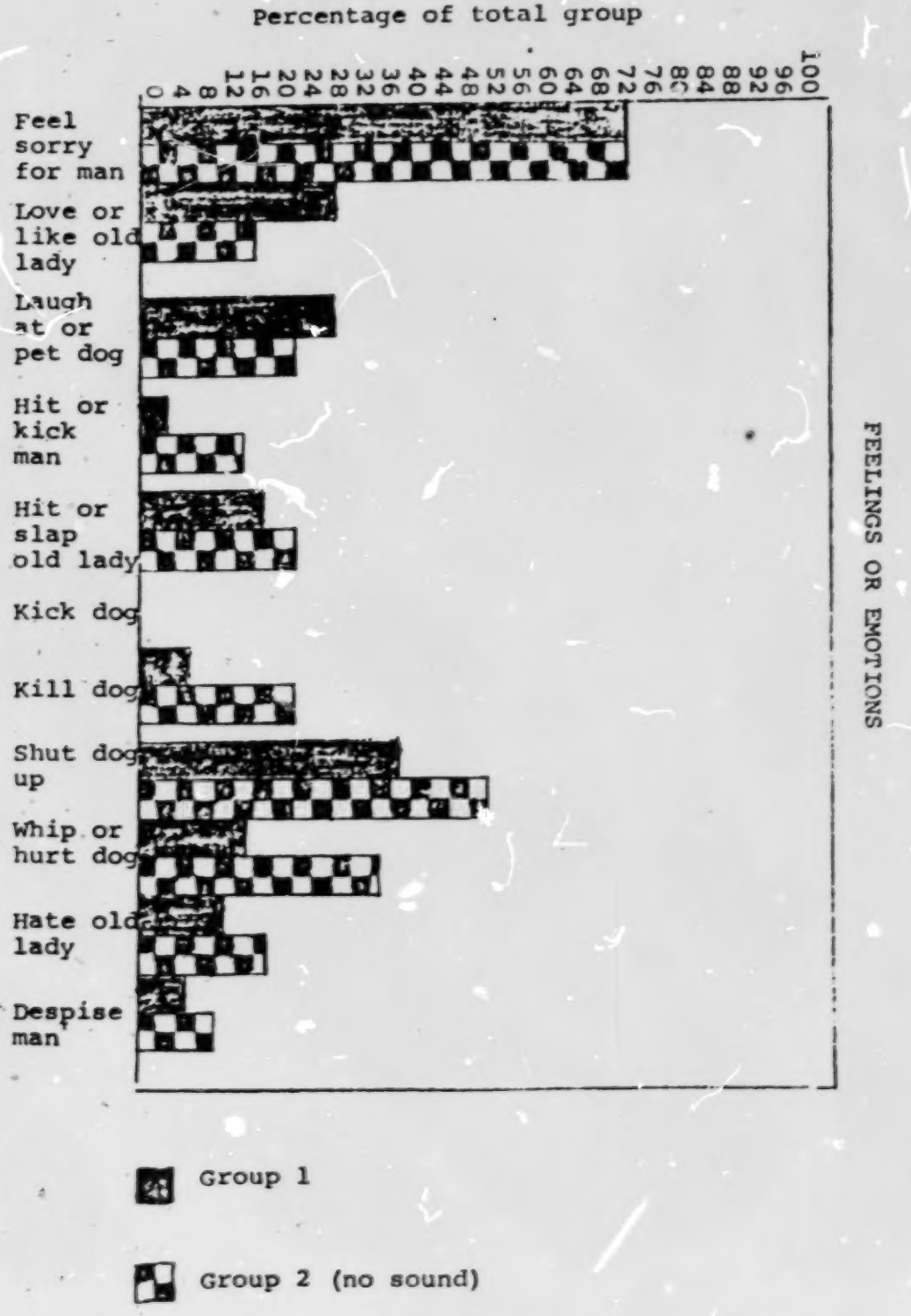

VIOLENT FEELINGS
3.5
3.0
2.5
2.0
1.5
1.0
.5
FEMALE VIOLENT
MALE VIOLENT
FEELINGS
GP. 2
GP. 1
FEELINGS
FEMALE VIOLENT FEELINGS
MALE VIOLENT
GP. 2
GP. 1 FEELINGS
FIELD DEPENDENT
INDISCRIMINATE
FIELD INDEPENDENT

Table 5


Percentage of total group
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100
Feel sorry for man
Love or like old lady
Laugh at or pet dog
Hit or kick man
Hit or slap old lady
Kick dog
Kill dog
Shut dog up
Whip or hurt dog
Hate old lady
Despise man
FEELINGS OR EMOTIONS
Group 1
Group 2 (no sound)

and less positive than males may be due to several factors. It may mean greater involvement with the film, or it may be due to resentment against society. Female field independents were highly negative while male field independents were less negative. The original hypothesis of stronger attitudes toward the characters of the film being exhibited by field dependents proved true for males, but not true for females. It would be interesting to test further to see if this sex difference is universally true, or is only a characteristic of this particular group.

There are many variables to be considered in a study such as this. Since the young people are disadvantaged, they may not have been able to express themselves well verbally. They may have understood the film better than the content test indicated. The low degree of correlation of the content test scores with field independence may also be due to a cultural deficiency.

More studies need to be done on emotions and their relationship to cognitive style. In this situation, the room was light enough for the subjects to be able to see each other clearly. A dark theater might have intensified the emotional involvement and increased understanding of content.

Disadvantaged Indians have the same percentage of field dependents, field independents, and indiscriminates as do the general population. This corroborates Ramirez's finding that American Indians were more field dependent if they identified with their traditional culture, since the average scores were more field dependent than the average population's scores. Females were more field dependent than males on the average.

All of the Indians were good at picking out details from the film, and this ability seemed to have nothing to do with cognitive style. Why can they pull out embeddedness from a film situation and not from a drawing (The Embedded Figures Test drawings)? This is a question that needs some more investigation. Since some of the subjects did not understand the word, plaid, but could draw the design, it seems pertinent to try to devise methods of visual rather than verbal testing in some instances.

The connection that sound has to comprehension of film and to emotional involvement with the content of film is important knowledge for the instructional designer.

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